

# SEQUENCE LISTING

<110> Miller, Duane D.  
 Tigyi, Gabor  
 Dalton, James T.  
 Sardar, Vineet M.  
 Elrod, Don B.  
 Xu, Huiping  
 Baker, Daniel L.  
 Wang, Dean  
 Liliom, Karoly  
 Fischer, David J.  
 Virag, Tamas  
 Nusser, Nora

<120> LPA RECEPTOR AGONISTS AND ANTAGONISTS AND METHODS OF  
 USE

<130> 20609/181

<140>

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<150> 60/190,370

<151> 2000-03-17

<160> 26

<170> PatentIn Ver. 2.1

<210> 1

<211> 1095

<212> DNA

<213> Homo sapiens

<400> 1

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 Phe Tyr Asn Arg Ser Gly Lys His Leu Ala Thr Glu Trp Asn Thr Val  
 35 40 45  
 Ser Lys Leu Val Met Gly Leu Gly Ile Thr Val Cys Ile Phe Ile Met  
 50 55 60  
 Leu Ala Asn Leu Leu Val Met Val Ala Ile Tyr Val Asn Arg Arg Phe  
 65 70 75 80  
 His Phe Pro Ile Tyr Tyr Leu Met Ala Asn Leu Ala Ala Ala Asp Phe  
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 Phe Ala Gly Leu Ala Tyr Phe Tyr Leu Met Phe Asn Thr Gly Pro Asn  
 100 105 110  
 Thr Arg Arg Leu Thr Val Ser Thr Trp Leu Leu Arg Gln Gly Leu Ile  
 115 120 125  
 Asp Thr Ser Leu Thr Ala Ser Val Ala Asn Leu Leu Ala Ile Ala Ile  
 130 135 140  
 Glu Arg His Ile Thr Val Phe Arg Met Gln Leu His Thr Arg Met Ser  
 145 150 155 160  
 Asn Arg Arg Val Val Val Val Ile Val Val Ile Trp Thr Met Ala Ile  
 165 170 175

Val Met Gly Ala Ile Pro Ser Val Gly Trp Asn Cys Ile Cys Asp Ile  
180 185 190

Glu Asn Cys Ser Asn Met Ala Pro Leu Tyr Ser Asp Ser Tyr Leu Val  
195 200 205

Phe Trp Ala Ile Phe Asn Leu Val Thr Phe Val Val Met Val Val Leu  
210 215 220

Tyr Ala His Ile Phe Gly Tyr Val Arg Gln Arg Thr Met Arg Met Ser  
225 230 235 240

Arg His Ser Ser Gly Pro Arg Arg Asn Arg Asp Thr Met Met Ser Leu  
245 250 255

Leu Lys Thr Val Val Ile Val Leu Gly Ala Phe Ile Ile Cys Trp Thr  
260 265 270

Pro Gly Leu Val Leu Leu Leu Leu Asp Val Cys Cys Pro Gln Cys Asp  
275 280 285

Val Leu Ala Tyr Glu Lys Phe Phe Leu Leu Leu Ala Glu Phe Asn Ser  
290 295 300

Ala Met Asn Pro Ile Ile Tyr Ser Tyr Arg Asp Lys Glu Met Ser Ala  
305 310 315 320

Thr Phe Arg Gln Ile Leu Cys Cys Gln Arg Ser Glu Asn Pro Thr Gly  
325 330 335

Pro Thr Glu Ser Ser Asp Arg Ser Ala Ser Ser Leu Asn His Thr Ile  
340 345 350

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<211> 1056

<212> DNA

<213> Homo sapiens

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accgtcagcg tgctgggtgct gctgaccaat ctgctgggtca tagcagccat cgcctccaac 180  
cgccgcttcc accagcccat ctactacctg ctgcgcaatc tggccgcggc tgacctcttc 240  
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<210> 4

<211> 351

<212> PRT

<213> Homo sapiens

<400> 4

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                      20                      25                      30

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Val Val Val Val Ala Leu Gly Leu Thr Val Ser Val Leu Val Leu Leu
  35                      40                      45

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Thr Asn Leu Leu Val Ile Ala Ala Ile Ala Ser Asn Arg Arg Phe His
  50                      55                      60

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Gln Pro Ile Tyr Tyr Leu Leu Gly Asn Leu Ala Ala Ala Asp Leu Phe
  65                      70                      75                      80

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Ala Gly Val Ala Tyr Leu Phe Leu Met Phe His Thr Gly Pro Arg Thr
                      85                      90                      95

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Ala Arg Leu Ser Leu Glu Gly Trp Phe Leu Arg Gln Gly Leu Leu Asp
  100                      105                      110

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Thr Ser Leu Thr Ala Ser Val Ala Thr Leu Leu Ala Ile Ala Val Glu
  115                      120                      125

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Arg His Arg Ser Val Met Ala Val Gln Leu His Ser Arg Leu Pro Arg
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Gly Arg Val Val Met Leu Ile Val Gly Val Trp Val Ala Ala Leu Gly  
145 150 155 160

Leu Gly Leu Leu Pro Ala His Ser Trp His Cys Leu Cys Ala Leu Asp  
165 170 175

Arg Cys Ser Arg Met Ala Pro Leu Leu Ser Arg Ser Tyr Leu Ala Val  
180 185 190

Trp Ala Leu Ser Ser Leu Leu Val Phe Leu Leu Met Val Ala Val Tyr  
195 200 205

Thr Arg Ile Phe Phe Tyr Val Arg Arg Arg Val Gln Arg Met Ala Glu  
210 215 220

His Val Ser Cys His Pro Arg Tyr Arg Glu Thr Thr Leu Ser Leu Val  
225 230 235 240

Lys Thr Val Val Ile Ile Leu Gly Ala Phe Val Val Cys Trp Thr Pro  
245 250 255

Gly Gln Val Val Leu Leu Leu Asp Gly Leu Gly Cys Glu Ser Cys Asn  
260 265 270

Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Leu Ala Glu Ala Asn Ser  
275 280 285

Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu Met Arg Arg  
290 295 300

Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln Ser Thr Arg  
305 310 315 320

Glu Ser Val His Tyr Thr Ser Ser Ala Gln Gly Gly Ala Ser Thr Arg  
325 330 335

Ile Met Leu Pro Glu Asn Gly His Pro Leu Met Asp Ser Thr Leu  
340 345 350

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<212> DNA

<213> Homo sapiens

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tgctgtttaa ttttttttcc taattctctg gtcacgcggc cagtgatcaa aaacagaaaa 180  
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 accaaaaaga ggggtgacct gctcattttg cttgtctggg ccacatgccat ttttatgggg 480  
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 tctcgcaccc cctccacagt cctcagcagg agtgacacag gcagccagta catagaggat 1020  
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<210> 6

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<212> PRT

<213> Homo sapiens

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 20 25 30

Val Leu Cys Val Gly Thr Phe Phe Cys Leu Phe Ile Phe Phe Ser Asn  
 35 40 45

Ser Leu Val Ile Ala Ala Val Ile Lys Asn Arg Lys Phe His Phe Pro  
 50 55 60

Phe Tyr Tyr Leu Leu Ala Asn Leu Ala Ala Ala Asp Phe Phe Ala Gly  
 65 70 75 80

Ile Ala Tyr Val Phe Leu Met Phe Asn Thr Gly Pro Val Ser Lys Thr  
 85 90 95

Leu Thr Val Asn Arg Trp Phe Leu Arg Gln Gly Leu Leu Asp Ser Ser  
 100 105 110

Leu Thr Ala Ser Leu Thr Asn Leu Leu Val Ile Ala Val Glu Arg His  
 115 120 125

Met Ser Ile Met Arg Met Arg Val His Ser Asn Leu Thr Lys Lys Arg  
130 135 140

Val Thr Leu Leu Ile Leu Leu Val Trp Ala Ile Ala Ile Phe Met Gly  
145 150 155 160

Ala Val Pro Thr Leu Gly Trp Asn Cys Leu Cys Asn Ile Ser Ala Cys  
165 170 175

Ser Ser Leu Ala Pro Ile Tyr Ser Arg Ser Tyr Leu Val Phe Trp Thr  
180 185 190

Val Ser Asn Leu Met Ala Phe Leu Ile Met Val Val Val Tyr Leu Arg  
195 200 205

Ile Tyr Val Tyr Val Lys Arg Lys Thr Asn Val Leu Ser Pro His Thr  
210 215 220

Ser Gly Ser Ile Ser Arg Arg Arg Thr Pro Met Lys Leu Met Lys Thr  
225 230 235 240

Val Met Thr Val Leu Gly Ala Phe Val Val Cys Trp Thr Pro Gly Leu  
245 250 255

Val Val Leu Leu Leu Asp Gly Leu Asn Cys Arg Gln Cys Gly Val Gln  
260 265 270

His Val Lys Arg Trp Phe Leu Leu Leu Ala Leu Leu Asn Ser Val Val  
275 280 285

Asn Pro Ile Ile Tyr Ser Tyr Lys Asp Glu Asp Met Tyr Gly Thr Met  
290 295 300

Lys Lys Met Ile Cys Cys Phe Ser Gln Glu Asn Pro Glu Arg Arg Pro  
305 310 315 320

Ser Arg Ile Pro Ser Thr Val Leu Ser Arg Ser Asp Thr Gly Ser Gln  
325 330 335

Tyr Ile Glu Asp Ser Ile Ser Gln Gly Ala Val Cys Asn Lys Ser Thr  
340 345 350

Ser

<210> 7

<211> 1260

<212> DNA  
<213> Homo sapiens

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Pro Pro Phe Gln His Pro Asp Leu Ser Pro Leu Leu Arg Tyr Ser Phe
    35                      40                      45

Glu Thr Met Ala Pro Thr Gly Leu Ser Ser Leu Thr Val Asn Ser Thr
    50                      55                      60

Ala Val Pro Thr Thr Pro Ala Ala Phe Lys Ser Leu Asn Leu Pro Leu
    65                      70                      75                      80

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Gln Ile Thr Leu Ser Ala Ile Met Ile Phe Ile Leu Phe Val Ser Phe  
 85 90 95

Leu Gly Asn Leu Val Val Cys Leu Met Val Tyr Gln Lys Ala Ala Met  
 100 105 110

Arg Ser Ala Ile Asn Ile Leu Leu Ala Ser Leu Ala Phe Ala Asp Met  
 115 120 125

Leu Leu Ala Val Leu Asn Met Pro Phe Ala Leu Val Thr Ile Leu Thr  
 130 135 140

Thr Arg Trp Ile Phe Gly Lys Phe Phe Cys Arg Val Ser Ala Met Phe  
 145 150 155 160

Phe Trp Leu Phe Val Ile Glu Gly Val Ala Ile Leu Leu Ile Ile Ser  
 165 170 175

Ile Asp Arg Phe Leu Ile Ile Val Gln Arg Gln Asp Lys Leu Asn Pro  
 180 185 190

Tyr Arg Ala Lys Val Leu Ile Ala Val Ser Trp Ala Thr Ser Phe Cys  
 195 200 205

Val Ala Phe Pro Leu Ala Val Gly Asn Pro Asp Leu Gln Ile Pro Ser  
 210 215 220

Arg Ala Pro Gln Cys Val Phe Gly Tyr Thr Thr Asn Pro Gly Tyr Gln  
 225 230 235 240

Ala Tyr Val Ile Leu Ile Ser Leu Ile Ser Phe Phe Ile Pro Phe Leu  
 245 250 255

Val Ile Leu Tyr Ser Phe Met Gly Ile Leu Asn Thr Leu Arg His Asn  
 260 265 270

Ala Leu Arg Ile His Ser Tyr Pro Glu Gly Ile Cys Leu Ser Gln Ala  
 275 280 285

Ser Lys Leu Gly Leu Met Ser Leu Gln Arg Pro Phe Gln Met Ser Ile  
 290 295 300

Asp Met Gly Phe Lys Thr Arg Ala Phe Thr Thr Ile Leu Ile Leu Phe  
 305 310 315 320

Ala Val Phe Ile Val Cys Trp Ala Pro Phe Thr Thr Tyr Ser Leu Val  
 325 330 335

Ala Thr Phe Ser Lys His Phe Tyr Tyr Gln His Asn Phe Phe Glu Ile  
 340 345 350

Ser Thr Trp Leu Leu Trp Leu Cys Tyr Leu Lys Ser Ala Leu Asn Pro  
 355 360 365

Leu Ile Tyr Tyr Trp Arg Ile Lys Lys Phe His Asp Ala Cys Leu Asp  
 370 375 380

Met Met Pro Lys Ser Phe Lys Phe Leu Pro Gln Leu Pro Gly His Thr  
 385 390 395 400

Lys Arg Arg Ile Arg Pro Ser Ala Val Tyr Val Cys Gly Glu His Arg  
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<210> 9

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer,  
 forward EDG-1

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<210> 10

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer,  
 reverse EDG-1

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<210> 11

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer,  
forward EDG-2

<400> 11

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<210> 12

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer,  
reverse EDG-2

<400> 12

gttggccatc aagtaataaa ta

22

<210> 13

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer,  
forward EDG-3

<400> 13

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<210> 14

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer,  
reverse EDG-3

<400> 14

tgctgatgca gaaggcaatg ta

22

<210> 15  
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forward EDG-4

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<210> 16  
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<212> DNA  
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<220>  
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reverse EDG-4

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22

<210> 17  
<211> 21  
<212> DNA  
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forward EDG-5

<400> 17  
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21

<210> 18  
<211> 21  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: primer,  
reverse EDG-5

<400> 18  
cagccagcag acgataaaga c 21

<210> 19  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer,  
forward EDG-6

<400> 19  
tgaacatcac gctgagtgc ct 22

<210> 20  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer,  
reverse EDG-6

<400> 20  
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<210> 21  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer,  
forward EDG-7

<400> 21  
agcaacactg atactgtcga tg 22

<210> 22  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer,  
reverse EDG-7

<400> 22  
gcacccctcat gattgacatg tg 22

<210> 23  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer,  
forward EDG-8

<400> 23  
atctgtgctgc tctatgcaag ga 22

<210> 24  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer,  
reverse EDG-8

<400> 24  
ggtgtagatg ataggattca gca 23

<210> 25  
<211> 21  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer,  
forward PSP24

<400> 25  
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<210> 26  
 <211> 22  
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 <220>  
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           reverse PSP24  
  
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22